

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 December 2006 (07.12.2006)

PCT

(10) International Publication Number
WO 2006/130095 A1

(51) International Patent Classification:
A01M 23/30 (2006.01)

(21) International Application Number:
PCT/SE2006/050143

(22) International Filing Date: 19 May 2006 (19.05.2006)

(25) Filing Language: Swedish

(26) Publication Language: English

(30) Priority Data:
0501293-5 3 June 2005 (03.06.2005) SE

(71) Applicant and

(72) Inventor: MÅNGS, Åke [SE/SE]; Märbäck 2748, S-796
91 Älvdalen (SE).

(74) Agent: DR. LUDWIG BRANN PATENTBYRÅ AB;
Box 17192, S-171 92 Stockholm (SE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

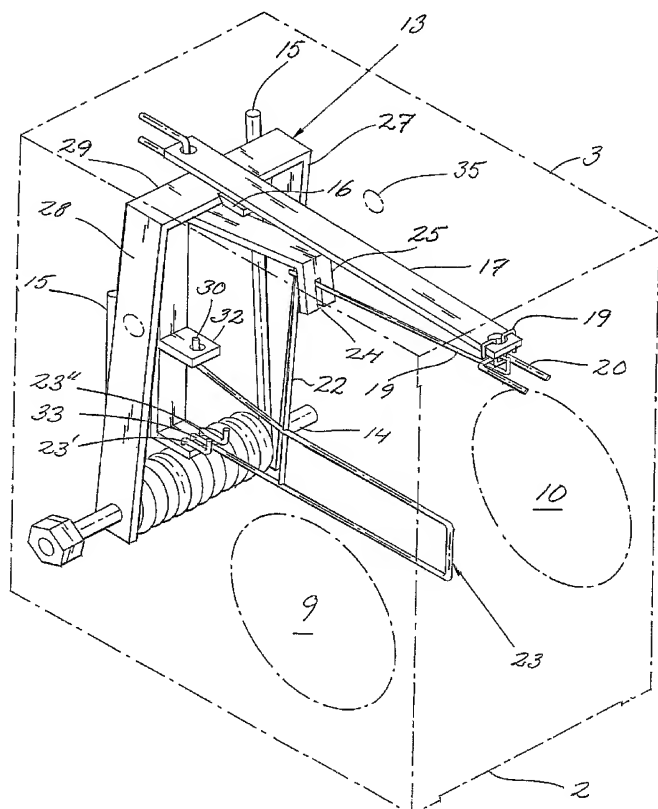
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV,
LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG,
SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US,
UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,
RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: GAME TRAP



(57) Abstract: The invention relates to a game trap comprising a striking arm (13) swingably arranged in a housing and biased by a spring (15), which striking arm is assigned a release mechanism (16-23) arranged to be activated by the entry of the game into the trap. The game trap is characterized in that the releasing mechanism comprises a movable member (23), which extends obstructingly in the way of the game in its attempts to pass through the trap or toward a bait, which member is limitedly movable in response to a force applied by the game, and by the motion thereof disengages the striking arm for a downwardly directed stroke against the head of the game.

TITLE

Game trap

TECHNICAL FIELD

The invention relates to a trap for the putting to death of game animals such as mink or marten, of the type that comprises a spring-biased striking arm, which is released by the entry of the game into the trap and in that connection delivers a killing stroke against the head thereof.

BACKGROUND AND PRIOR ART

Killing traps of this type usually have a release mechanism, which disengages the striking arm in response to the game loading a pressure-sensitive device in the bottom of the trap, a so-called step-release mechanism. A weakness of this type of release mechanism is the uncertainty in respect of the point of impact of the striking arm on the head, which may vary depending on the animal's motion pattern and speed of motion in the trap.

Since it is, from an ethical point of view, important that the animal is killed fast, the point of impact on the head is critical, and it is therefore a desire that a game trap for the purpose is constructed in order to guarantee continuous and directly killing impact patterns.

This and other objects are attained by a game trap having the features of claim 1.

In a primary aspect of the invention, a game trap is provided wherein a spring-loaded striking arm is assigned a release mechanism arranged to be activated upon contact with the nose portion of the game.

In an additional aspect, a passage trap is provided wherein the striking arm is released by the nose portion of the game in its attempts to pass through the trap. In an additional aspect of the invention, a bait-set trap is provided wherein the striking arm is released by the nose portion of the game in its attempts to reach a bait. In yet an aspect of the invention, a bait-set trap is provided wherein the replacement of the bait is possible without the striking spring is tighten down, and in a final aspect of the invention, a combined trap is provided, which is readily convertible from a passage trap for mink to a bait-set trap for marten.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is explained closer with reference being made to the appended drawings, wherein

Fig. 1 shows a partly broken-away cross section through a game trap according to the invention, and

Fig. 2 shows a game trap according to the invention in an oblique projection and in phantom view.

DETAILED DESCRIPTION OF AN EMBODIMENT EXAMPLE

In an embodiment example shown in the drawings, the game trap comprises a housing 1 having the basic shape of a box, consisting of a bottom piece 2, a top piece 3, as well as four pair-wise opposite side pieces 5, 6, 7 and 8, it being appreciated that in Fig. 1, the side piece situated closest to the observer is broken-away.

The game trap according to Figs. 1 and 2 is arranged to be useable as a passage trap and has, for this purpose, two opposite openings 9 and 10, formed in opposite side pieces of the housing, and which openings define a substantially rectilinear passage through the trap. The openings 9,10 are typically given a size of maximally 70 mm in a trap intended for mink, or maximally 90 mm if the trap is intended for marten. The mentioned measure refers to a greatest dimension of the opening, which may be given another shape than the round shown. The trap is set up in the conventional way with the appurtenant entrance tunnels according to existing safety regulations in front of the respective opening 9,10. Without it being shown herein, it may be mentioned that these tunnels should have a length of at least 300

mm, a height of maximally 120 mm and a maximum width of 100 mm what relates to a mink trap. Notwithstanding the fact that the trap described so far primarily is intended to be set up as a passage trap, it may naturally be set with a bait in or outside either of the openings 9,10. A third opening 11 is formed in a side piece that connects said opposite side pieces, which opening optionally may be arranged for the conversion of the trap to a bait-set trap having a detachable bottom piece, such as is described closer below. Without it particularly being shown in the drawings, it is realized that said third opening 11 is closed by a cover, not shown, when the trap is used as a passage trap.

Inside the trap, a striking arm 13 is swingably arranged around a shaft 14. The striking arm 13 is driven into a downwardly directed stroke by a spring 15, and is kept in a biased or bait-set position by the spring by means of engagement with a shoulder 16, which is arranged on a movable bar 17. The bar 17 is swingably mounted in the end situated closest to the shoulder 16, and is connected to a link device 18,19 in the opposite end thereof. This link device comprises an interconnected link 18, which is turnably connected to a swinging arm 19. The swinging arm 19, the interconnected link 18 and the bar 17 are captured in a bait-set position by a clamp 20, arranged on the housing of the trap, as long as the free end 21 of the swinging arm is prevented from swinging downward from the primed position thereof, shown in Figs. 1 and 2. In this position, the free end 21 of the swinging arm rests on the top of a bar 22 included in a gate 23. The gate 23 is swingably mounted in the housing 1 and extends blockingly in the way of the game through the trap, and more precisely into the passage that is defined by the two openings 9 and 10. When an animal, in attempts to pass between the openings, with the nose tip or a portion immediately behind or next to the nose tip, applies a forward force against the blocking member or the gate 23, this swings away, the end 21 of the swinging arm sliding off the top of the bar 22. A guide groove 24 in a holder 25 fixedly arranged on the housing guarantees that the swinging arm 19 retains the direction thereof and slides off the point of support on the top of the bar 22 swinging away. Thereby, the swinging arm 19 is free to swing downward with the free end 21 thereof, with the result that the opposite end is turned into the clamp 20, the interconnected link 18 and the bar 17 being released from the grip of the clamp and being lifted in such a way that the bar 17 can swing upward in order to trigger the striking arm into a downwardly directed stroke against the head of the game. The

motion of the bar is driven by the striking arm, which, by the force applied by the spring, rests against an inclined slip surface 26 formed on the shoulder 16, whereby the striking arm is constantly aiming to lift the bar 17 with the shoulder 16 in the biased position of the striking arm.

The striking arm 13 is U-shaped and has two parallel legs 27 and 28, respectively, which in one ends thereof have holes for swingable mounting on the through shaft 14, the latter in the form of a bolt 14 traversing the housing 1. The legs 27,28 have such a length that the striking arm 13, during the stroke movement, covers a substantial part of the passage defined by the openings 9 and 10, at least about 75–80 % of the width of the passage. In the opposite ends, the legs 27,28 are connected to a transverse stay 29. The stay 29 has a length that separates the legs 27,28 into a mutual distance, which is adapted to size of the game animal, in particular the head length thereof, and to the position of the gate in the trap. In the case of a passage trap intended for mink, the gate 23 is advantageously swingably mounted in both directions from a vertical plane that extends centrally through the striking arm or halfway between the legs 27,28 of the striking arm, in such a way that the trap is effective irrespective of the direction of motion of the mink through the trap. In that connection, the stay 29 is dimensioned with a length that allows the striking arm to hit the head of the mink behind the eyes thereof, irrespective of from which side the mink enters the trap. The cranium of the adult mink from nose to neck has typically a length of about 5,5 cm, to which the soft tissue of the animal's nose should be added. As a guideline, it may be mentioned that, in a mink trap, the length of the stay 29, or the distance between the legs 27 and 28, should amount to about 60–70 mm. The gate 23 is assigned a pair of turn stops 23' and 23", which may extend from said holder 25 in order to limit the swingability of the gate in both directions around a trunnion formed by the pivots 30 and 31, formed on the gate 23 and mounted in tongues 32 and 33, which project from the holder 25. The turn stops 23', 23" are arranged with a mutual distance that limits the movability of the gate to an area that not intrudes on the track of motion of the striking arm during the stroke, in the embodiment example to an area that is housed inside or between the two legs 27 and 28 of the striking arm. The turn stops establish the position of the head of the game in the trap during the stroke. Tests with a mink trap according to the embodiment example has turned out to provide continuous impact patterns

wherein the striking arm in all cases has hit the head about 4 cm behind the nose tip.

The striking arm 13, the bar 17 with the shoulder 16, as well as the holder 25 may be manufactured from flat iron, while the gate 23, the swinging arm 19 and the interconnected link 18 may be manufactured from wires in suitable diameters. The striking spring 15 is a pin spring, which rests against the housing 1 in order to apply a force against the transverse stay 29 of the striking arm. Furthermore, it should be mentioned that the reference numerals 34 and 35 refer to a pair of mutually aligned holes through the opposite side pieces 5,6 of the trap for the insertion of a bar (not shown) for securing the striking arm upon setting of the trap.

The bottom piece 2 may, as is shown in Fig. 2, comprise a part 36 detachable from the outside of the housing and having a holder for the bait, for instance in the form of a spear 37. The detachable part 36 is advantageously profiled in the side edges thereof in order to be insertable in the bottom piece on correspondingly formed profiles in the side edges of an opening 38 recessed in the bottom piece 2. A simple locking device, for instance in the form of a turnable hook, prevents the detachable part from unintentionally sliding out of the bottom piece, in particular in the case the trap is set in a tree with the opening 11 facing downward such as in trap-setting for marten.

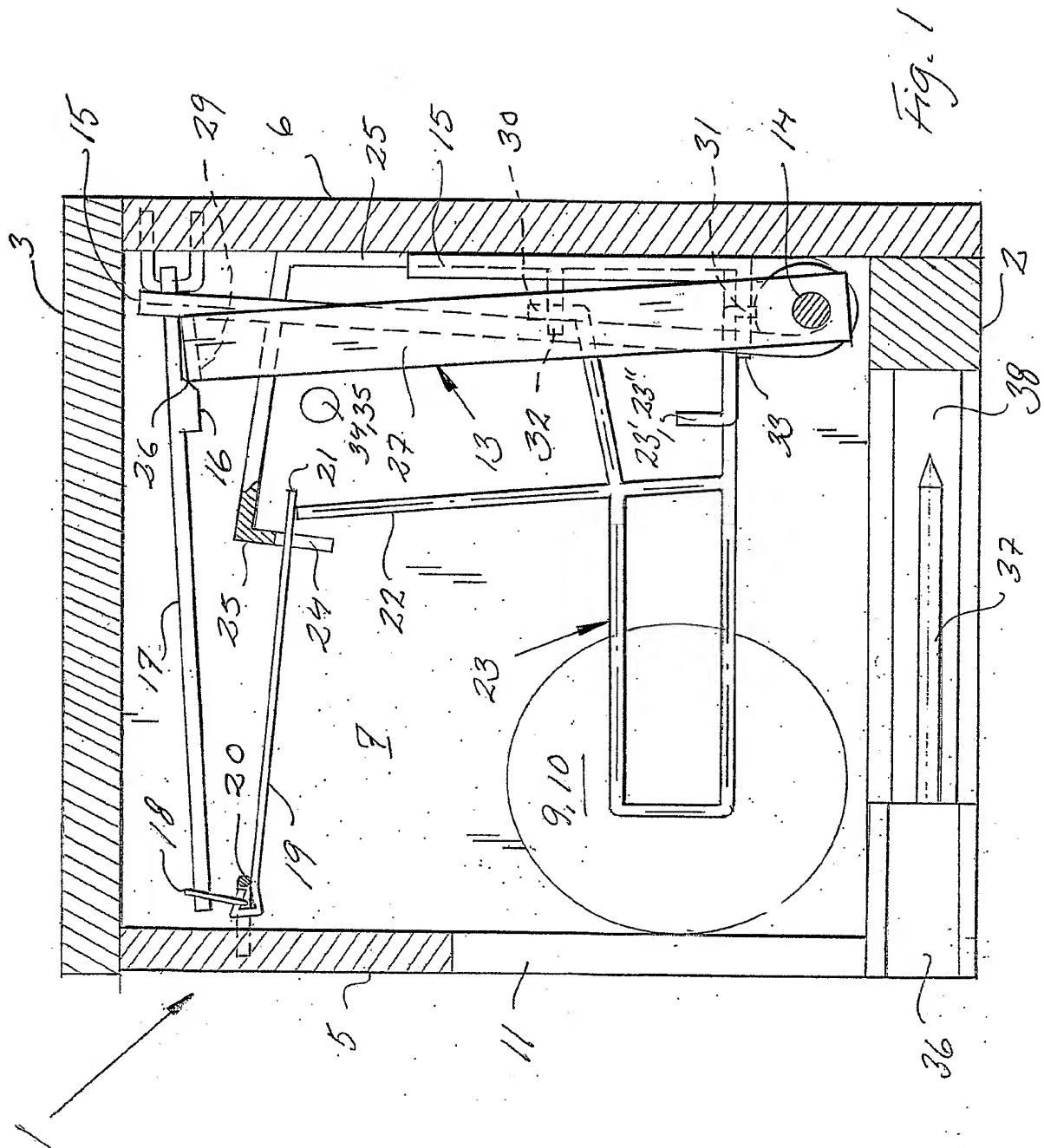
The housing 1 may be made of wood having a removable or openable top piece for the tightening of the striking arm. Furthermore, detachable covers may be arranged for the openings 9, 10 and 11 for simple conversion from a passage trap for mink to a bait-set trap for marten.

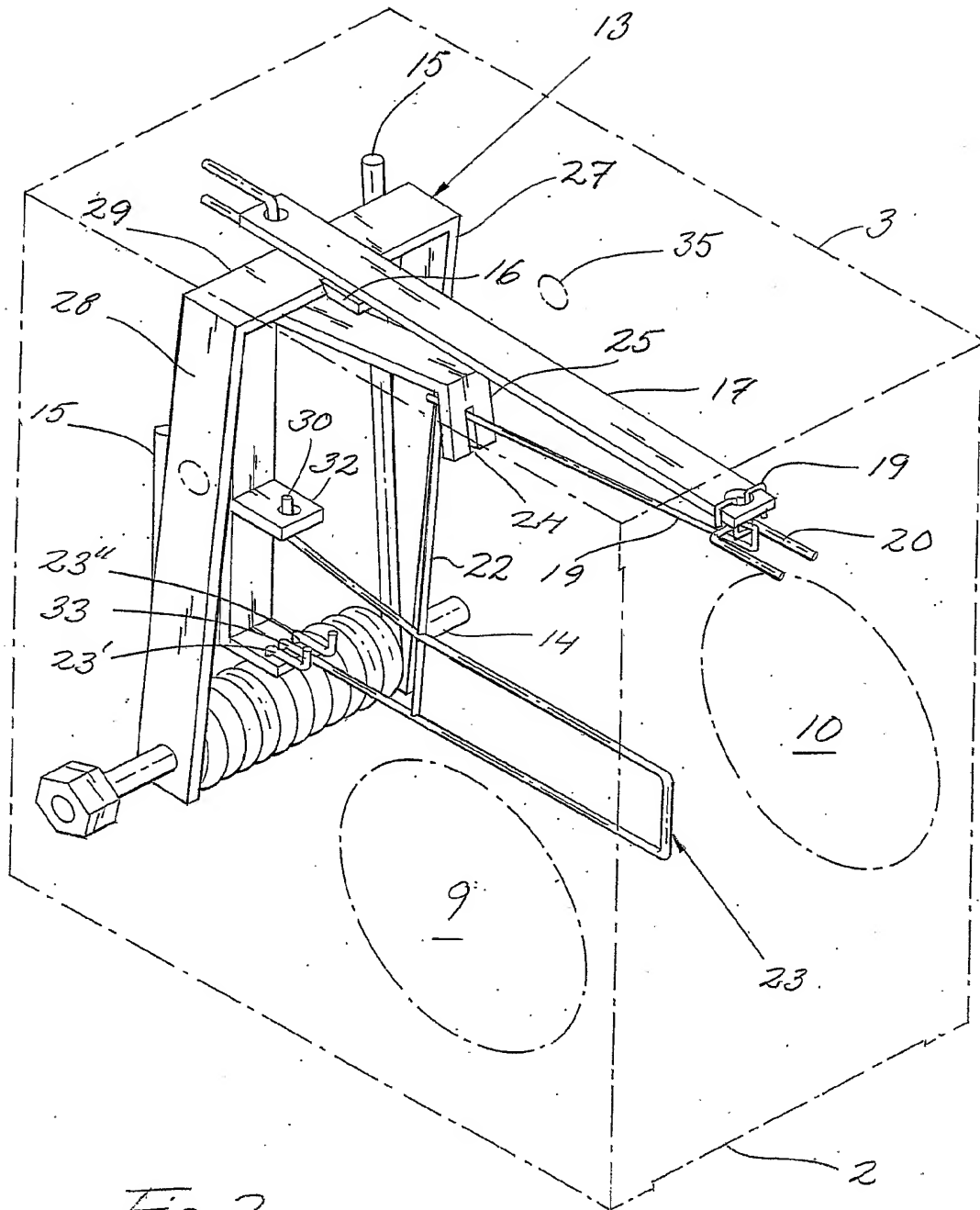
In the embodiment example, the wayblocking device is a member having limited swingability in opposite directions within an area that extends inside the legs of the U-shaped striking arm. Alternatively, it is also feasible that a wayblocking member is formed of a deformable or resilient material, which is given a limited capability of moving in the direction of motion of the passing game.

CLAIMS

1. Game trap, comprising a striking arm (13) swingably arranged in a housing and biased by a spring (15), which striking arm is assigned a release mechanism (16-23) arranged to be activated by the entry of the game into the trap, characterized in that the releasing mechanism comprises a movable member (23), which extends obstructingly in the way of the game in its attempts to pass through the trap or toward a bait, which member is limitedly movable in response to a forward force applied by the game, and by the motion thereof disengages the striking arm for a stroke directed from above against the head of the game.
2. Game trap according to claim 1, characterized in that the striking arm (13) is U-shaped and the movable member (23) is limitedly movable in opposite directions within a limited area that extends inside the legs (27,28) of the U-shaped striking arm.
3. Game trap according to claim 2, characterized in that the movable member (23) is swingably movable in opposite directions from a vertical plane, which extends centrally through the striking arm, and assigned turn stops (23',23''), which limit the swingability of the gate in the respective direction between the legs (27,28) of the U-shaped striking arm.
4. Game trap according to any one of the preceding claims, comprising a box-shaped housing consisting of a bottom piece, a top piece and four side pieces, characterized by a release mechanism comprising a swingably movable gate (23), which extends blockingly over a passage defined by two openings (9,10) recessed in opposite side pieces of the housing.
5. Game trap according to claim 1, characterized in that the movable member is a swingably mounted gate (23), which, in the primed position of the trap, supports one, the free, end (21) of a swinging arm (19), which in the other end thereof via a link (18) is connected to a swingably arranged bar (17) on which a shoulder (16) is arranged, which shoulder has a slip surface (26) against which the striking arm (13) rests by the force of a striking spring (15) driving the striking arm.

6. Game trap according to claim 5, characterized in that the swinging arm (19), with the free end (21) thereof, rests against the top of a bar (22) arranged on the gate, and is received in a guide groove (24), which forces the swinging arm (19) to slide off the point of support thereof on the bar (22) when the gate (23) is brought to swing.
7. Game trap according to any one of the preceding claims, characterized in that the U-shaped striking arm (13) has a distance between the parallel legs (27,28) thereof amounting to approx. 60–70 mm.
8. Game trap according to claim 4, characterized by a third opening (11) formed through a side piece that connects said opposite side pieces.
9. Game trap according to any one of the preceding claims, characterized in that the bottom piece comprises a part (36) detachable from the outside of the housing and having a holder (37) for the bait.
10. Game trap according to any one of the preceding claims, characterized in that the openings (9,10) have a size of maximally 70 mm, and the opening (11) has a size of maximally 90 mm.





INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE2006/050143

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: A01M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | US 1981785 A (JOSEPH DONADEI), 20 November 1934 (20.11.1934), the whole document -- | 1-10 |
| A | US 4852294 A (LANGLI), 1 August 1989 (01.08.1989), the whole document -- | 1-10 |
| A | US 5010682 A (SACCON), 30 April 1991 (30.04.1991), the whole document -- ----- | 1-10 |

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

7 August 2006

Date of mailing of the international search report

08-08-2006

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Mimmi Westman/EK

Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE06/050143

International patent classification (IPC)
A01M 23/30 (2006.01)

Download your patent documents at www.prv.se

The cited patent documents can be downloaded at www.prv.se by following the links:

- In English/Searches and advisory services/Cited documents (service in English) or
- e-tjänster/anförda dokument (service in Swedish).

Use the application number as username.

The password is **LORKGEDSWG**.

Paper copies can be ordered at a cost of 50 SEK per copy from PRV InterPat (telephone number 08-782 28 85).

Cited literature, if any, will be enclosed in paper form.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2006/050143

| | | | | | | |
|-------|---------|---|------------|------|-------------|------------|
| US | 1981785 | A | 20/11/1934 | NONE | | |
| ----- | | | | | | |
| US | 4852294 | A | 01/08/1989 | AT | 38760 T | 15/12/1988 |
| | | | | AU | 4237885 A | 28/11/1985 |
| | | | | CA | 1255502 A | 13/06/1989 |
| | | | | DE | 3566347 D | 00/00/0000 |
| | | | | EP | 0183719 A,B | 11/06/1986 |
| | | | | SE | 0183719 T3 | |
| | | | | NO | 154413 B,C | 09/06/1986 |
| | | | | NO | 841815 A | 08/11/1985 |
| | | | | WO | 8505007 A | 21/11/1985 |
| ----- | | | | | | |
| US | 5010682 | A | 30/04/1991 | NONE | | |
| ----- | | | | | | |

PUB-NO: WO2006130095A1
DOCUMENT-IDENTIFIER: WO 2006130095 A1
TITLE: GAME TRAP
PUBN-DATE: December 7, 2006

INVENTOR-INFORMATION:

| NAME | COUNTRY |
|--------------|----------------|
| MAANGS, AAKE | SE |

ASSIGNEE-INFORMATION:

| NAME | COUNTRY |
|-------------|----------------|
| MAANGS AAKE | SE |

APPL-NO: SE2006050143

APPL-DATE: May 19, 2006

PRIORITY-DATA: SE00501293A (June 3, 2005)

INT-CL (IPC): A01M023/24

EUR-CL (EPC): A01M023/24